NOAA FISHERIES

Protected Species Science Program Review

Southeast Fisheries Science Center Summary and Response – October 2015

Introduction

On August 25-28, 2015, the Southeast Fisheries Science Center (SEFSC) conducted a peer review of their marine mammal and sea turtle programs. This is the third in a synchronized cycle of peer reviews being conducted within each of NOAA Fisheries' six fisheries science centers and the Office of Science and Technology. This report represents the SEFSC's response to the findings and recommendations made by our review panel and an action plan for implementing improvements to the programs, based on those recommendations. The materials (terms of reference, agenda, background materials, presentations) and the panelists' reports for this review may be found at:

http://www.sefsc.noaa.gov/program_reviews/2015/default.htm

The review's Terms of Reference asked panelists to consider some overarching questions over the course of the review week:

1. Do current and planned protected species scientific activities fulfill mandates and requirements under the ESA and MMPA, and meet the needs of the regulatory partners?
2. Are there opportunities to be pursued in conducting protected species science, including shared and collaborative approaches with partners?
3. Are the protected species scientific objectives adequate, and are we using the best suite of techniques and approaches to meet those objectives?
4. Are the protected species studies being conducted properly (survey design, statistical rigor, standardization, integrity, peer review, transparency, confidentiality, etc.)?
5. How are advances in protected species science and methodological approaches being communicated and applied in the SEFSC?

The format used to conduct the review included presentations, panel discussions and question and answer periods. Each day was capped off with a public comment period to enable stakeholders the opportunity to provide their input to the panelists. Scientists cast their overviews of marine mammal and sea turtle programs in the context of data collections, fisheries interactions, stock assessments, stranding response, research for conservation and work related to the Deep Water Horizon event.

A scientist from NOAA Fisheries Northeast Fisheries Science Center (NEFSC) participated in the review to present a more comprehensive picture of sea turtle work that spans the combined jurisdictions.

The full suite of recommendations and this synthesis and response report will be maintained as a reference to help guide decisions for marine mammal and sea turtle science going into the future, and as a benchmark against which to measure our progress in improving the program.

Acknowledgements

Thanks are extended to the panelists for the significant amount of time and care they invested in preparing for and conducting this review. They brought to the table a breadth of expertise and experiences and those unique perspectives provided for a particularly rich collection of findings and recommendations we can use to strengthen the SEFSC's programs. The panelists for this review were:

- Bill Kendall (Chair) -- USGS Colorado Cooperative Fish and Wildlife Research Unit
- Selina Heppell – Oregon State University
- Tim Ragan – Marine Mammal Commission (retired)
- Gustavo Goni – NOAA Research, Atlantic Oceanographic and Meteorological Laboratory
- Lisa Balance – NOAA Fisheries, Southwest Fisheries Science Center

Thanks also go to Stephanie Oakes for her role as the national coordinator for the nationally-harmonized reviews, and to Stacy Hargrove and Jennifer Schull, who coordinated this review within the SEFSC. We're also grateful to the many partners and stakeholders who attended, gave public comments, and agreed to serve on discussion panels to provide their perspectives to the panelists.

Finally, the SEFSC marine mammal and sea turtle scientists are recognized for their exemplary efforts in planning for the review, presenting our programs to the reviewers, and for summarizing the panel reports.

Response to Key Panel Recommendations

The panelists provided a wealth of observations and recommendations in their reports, ranging from broad brush, strategic topics to very specific, tactical advice. To help organize this input, highlighted recommendations are binned into four main categories: 1) vision; 2) organizational structure and staffing; 3) monitoring and research; and 4) communications.

Vision

- Create vision of ideal situation including ideal organizational structure, staff, infrastructure, budget and partnerships so you know the directions needed to move closer to vision. Include sufficient variability to account for typical and atypical circumstances.
- Identify real strengths in the programs and restructure as needed to support those strengths.
- Establish regional priorities that ensure species are not subject to irreversible changes, incorporating risk analysis, the cornerstone of understanding stock structure and an emphasis on baselines and trends.

Response
Strategic plans have been developed to guide SEFSC marine mammal and sea turtle activities. Based on feedback received from this review, those strategic plans will be revisited, first from the science perspective, taking into account new information, changes in the ecosystem (physical, biological, social) and advances in analytical methods and technologies.

Recently, the Southeast Regional Office (SERO) and the Office of Protected Resources (OPR) completed their strategic plans. A workshop will be held to bring managers from SERO and OPR together with scientists from the SEFSC to develop a shared vision for protected species science in the region and to tune our respective strategic plans to reflect that vision. This will form the foundation from which operational work plans will be developed. This work will enable informed strategic and tactical decisions to be made, and to better position the region to respond to pressures and opportunities that may arise over time. This effort will also contribute to rationalizing resource allocations among demands for: a) monitoring; b) conservation research; and, c) research to improve monitoring and analytical methods.

Organizational Structure and Staffing

- Review organizational structure to ensure adequate supervision, clear lines of authority and communications, opportunities for advancement, and strong programmatic focus and efficiency.
- Create a Marine Mammal and Sea Turtle Division Chief responsible for staff from all laboratories. Organize budget so oversight of all funds across all labs is the responsibility of the new division.

Response: The geographic distribution of SEFSC labs, staff and programmatic activities facilitates place-based science. The downside of this distributed configuration is that it can also contribute to programmatic fragmentation, a failure to reach the critical mass necessary to catalyze innovation and to leverage diverse skills and capabilities across the enterprise. The organizational structure of the SEFSC's marine mammal and sea turtle science programs will be evaluated and alternatives that aim to optimize this structure and in a way that is efficient, cost effective and well-aligned with the program vision and strategic plan will be developed.

- The Center appears to be understaffed for the size of the region, the intensity of management needs and the diverse demands of three fishery management councils.
- Augment staff for marine mammal and sea turtle programs, ideally by creating a number of new, permanent positions.
- Provide for 2-3 yr. post-doc positions allocated strategically to programs as critical needs arise
- Use existing training funds to support external travel and training for staff and to bring external expertise to the SEFSC
- Decrease reliance on contractors for long-term needs.

Response: We recognize there is a significant mismatch between the demand for scientific advice and products and the capacity to meet those demands. That tension is not unique to this program or to this region, but we acknowledge that the scope of the mismatch was raised by our reviewers as significant. This puts a premium on the need for strong strategic planning that sets mid- and long-term priorities that are reconciled from the science and management perspectives. The strategic planning effort, described above, is an important first step to plotting the course for the SEFSC's protected species team and for its work focus going into the future. Once the planning exercises are completed, the SEFSC can use those results to circle back to our staffing plan to ensure that the full suite of tools available are being used to augment the scientific team (as funding permits) with the highest-priority skill sets and in the optimal blend of FTE and contract positions. It also helps us make the case for additional staffing as those opportunities arise.

The use of post-docs in 2-3 yr. positions to infuse our programs with new capacity and capabilities is a valuable approach. Similarly, we agree that using training funds to support professional development of the protected species staff is in the best interest of our scientists and the program objectives.

Monitoring and Research

- Support baseline data collections, long-term datasets and time series, including strandings. Obtain and maintain critical baseline data that form the core components for addressing critical science needs associated with the MMPA and ESA (abundance, trends in abundance, population structure, estimates of mortality).
- Support research to identify which indicators of population and ecosystem changes can be measured accurately and are most likely to show effects with large-scale impacts occur.

Response: Continued investments into the acquisition and maintenance of long-term data sets are fundamental to understanding the status and trends of the region's protected species populations. Lessons learned in attempting to describe baseline conditions in the aftermath of the Deepwater Horizon oil spill are valuable reminders of

how crucial comprehensive data collection program can be in understanding trends, and evaluating the relative impacts of environmental perturbations on those trends. The SEFSC will use the strategic planning process, described above, along with any additional required analyses to establish priorities for long-term monitoring. Management Strategy Evaluations – simulation approaches, can be used to help set priorities to ensure limited resources are being invested in ways that yield the highest scientific returns.

- Increase sea turtle program coordination and collaboration within the SEFSC, including across divisions.
- Hold regular meetings with USFWS for assessment and research needs prioritization.
- Work across Centers with outside advice on prioritization of data analysis and modeling techniques needed for assessment model improvement with input from marine mammal and fisheries assessors.
- Hold strategic planning meeting to discuss if and how greater collaboration between SE and SWFSC molecular genetics lab staff.
- The Gulf of Mexico is a distinct ecosystem in that it includes the Exclusive Economic Zones (EEZ) of more than one nation. Strive to comprehensively survey the Gulf of Mexico for marine mammals into the future.
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Response: These recommendations point to the importance of continued collaboration and the development and nurturing of internal and external partnerships. Strategies for maintaining efficient and effective collaborations, tailored to this resource-limited environment, will be developed. One good example is to participate in the Southeast Regional Sea Turtle Network meeting to promote information/technology transfer and strengthen regional-scale collaborations and strategic planning. We agree that stronger investments in collaborations with scientists from other NOAA Fisheries science centers, particularly with the SWFSC and NEFSC could yield high returns via technology transfer and leveraging resources.

The SEFSC agrees that expansion of marine mammal surveys to basin scale would strengthen our understanding of these populations. Adequately monitoring just the U.S EEZ in the Gulf has been challenging. Expanding that work to include the full Gulf of Mexico will be even more so, considering the additional resources, logistics planning and support and permitting it will require. However, we agree that conducting a comprehensive survey would provide a basin-scale context for the distribution and densities of marine mammal species, bringing additional value to future surveys conducted in the U.S. EEZ.

- Continue to push for back-to-back or double vessel surveys needed to quantify uncertainty in abundance estimates.

- Conduct research on more cost-effective survey techniques (e.g., HD video, photography, acoustic monitoring) to improve the effectiveness and efficiency of long-term trend data.
- Support research to identify which indicators of population and ecosystem changes can be measured accurately and are most likely to show effects when large-scale impacts occur.
- Incorporate more ecosystem/ecological thinking into assessments. Need key research and monitoring to understand how ecosystems function and vary. Food web and ecosystem processes.
- Consider other data analyses and methods to obtain trends in abundance or vital rates. Move toward vital rate monitoring (rate changes in space and time) rather than point estimation.

Response: Monitoring investments must be applied strategically to gain the highest possible scientific return on those investments. The strategic planning work described above will be used to allocate an appropriate portion of the SEFSC's research on improving survey and assessment methods and determining the relative value of indicators of population and ecosystem changes.

Partnerships with other science centers, federal agencies and academic scientists will be explored to ensure monitoring is carried out via the most effective and efficient means. Exploration of advanced technologies will be included in these collaborations.

Analytical methods will be used to evaluate survey configurations that yield the highest statistical power for detecting change in population indices and results from these analyses will be used in our requests for ship time going into the future.

- Fully tap the Sea Turtle Stranding and Salvage Network (STSSN) data for potential contributions to understanding population composition change over time and make fully accessible to researchers.
- Prioritize and standardize [sea turtle] tissue collections across the region. Support the existing age and growth work on sea turtles and place a strong emphasis using these tools for to gain insights into the at-sea lives of marine turtles.

Response: We agree that additional analyses of the STSSN data could yield valuable results. Working with the STSSN and within our own sampling programs to set priorities and to standardize tissue collections for sea turtles within the region is sound advice.

Communications

- SEFSC mammal and sea turtle scientists conduct regular, formalized meetings with the Southeast Regional Office (SERO) and the headquarters Office of Protected Resources (OPR).
- Conduct more public outreach to highlight conservation needs and innovative science with links to research activities relevant to public interests, conservation successes, and scientific discoveries on the website, and citizen science opportunities (e.g., sightings and strandings reports).
- Work together on research prioritization instead of competing for funding.

Response: We will capitalize on Protected Resources Board meetings as an opportunity to meet with SERO and OPR partners to discuss annual priorities and annual operating plans. Protected species priorities will be included on the agenda of semi-annual meetings with SERO to further solidify annual planning and to discuss shifts in science requirements due to changes in management strategies or patterns observed within the ecosystems and to conduct strategic planning for out years. This approach will also contribute to a more collaborative approach to setting annual research priorities to focus and guide the search for funding.

SEFSC staff will collaborate with our communications team to build and maintain a list of contemporary projects to be highlighted via social media and feature stories.

The SEFSC has been an active participant in developing a South Atlantic Fishery Management Council-sponsored Citizen Science program. We will ensure that protected species projects are considered in this new approach to data collections in the region.

Conclusions:

This is the third in the series of programmatic peer reviews carried out under the nationally-standardized program review process within NOAA Fisheries. Progress has been made in implementing recommendations from the earlier reviews in the cycle, which focused on the data collection programs that feed stock assessments carried out under the Magnuson-Stevens Act and the stock assessments those data feed. Examination of the collective set of recommendations will also be important for balancing resources needs staging their implementation.

Some of the recommendations can be implemented via discrete actions, others require long-term, continuous investments resulting in an action plant that covers that full range of timelines. Based on the evaluation of the recommendations, a suite of actions and timelines has been generated (Table 1).

Table 1. Summary of Action Items and Schedules

Action	Timeline
Vision	
Within the SEFSC, revisit the current strategic plans for marine mammal and sea turtle research and prepare an analysis of revisions required to refresh them from a science perspective.	FY16
Conduct a strategic planning workshop to establish a shared, mid- to long-term vision for marine mammal and sea turtle monitoring and research incorporating science to support the management efforts of SERO and OPR and other stakeholders.	Early FY17
Organizational Structure and Staffing	
Evaluate the current organizational structure of marine mammal and sea turtle activities within the SEFSC and generate a range of alternatives to optimize the structure and leadership of the program. Begin implementation of the selected alternative.	FY16-17
Conduct a focused assessment of priority training needs. Invest in the professional development of staff by supporting training opportunities.	FY16-Continuous
Continue to use post-doc positions to infuse the program with new capacity and capabilities.	FY16
Revisit the balance of resources expended on staff and operational science.	FY16
Monitoring and Research	
Continue to invest in baseline data collections for marine mammals and sea turtles.	Continuous
Explore feasibility of conducting a comprehensive, Gulf-wide survey for marine mammals.	FY16

Action	Timeline
Participate in the Southeast Regional Sea Turtle Network meeting to promote information/technology transfer and strengthen regional-scale collaborations and strategic planning.	2016
Collaborate more closely with the STSSN to prioritize and standardize sea turtle tissue collections and more fully explore their longitudinal data.	FY16-17
Strengthen internal and external partnerships to ensure monitoring programs are carried out as effectively and efficiently as possible and take advantage of advanced technologies.	Ongoing
Use simulation techniques to evaluate monitoring approaches to maximize the statistical power of population surveys.	FY16
Communications	
Use Protected Resources Board meetings and annual/semi-annual meetings with SERO as a means to generate and ground truth annual operating plans for protected species science that is responsive to science priorities and management needs.	FY16 - continuous
Ensure protected species projects are considered in the Citizen Science Program under development in the South Atlantic.	FY16-17
Collaborate with communications team to build and maintain a list of contemporary projects that may be highlighted via social media and feature stories.	FY16